

PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

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Applicant's or agent's file reference 12504.453	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/US03/11008	International filing date (day/month/year) 10 April 2003 (10.04.2003)	Priority date (day/month/year) 10 April 2002 (10.04.2002)
International Patent Classification (IPC) or national classification and IPC IPC(7): A61K 31/66, 31/075; C07F 9/02; C07C 43/205 and US Cl.: 514/109, 720, 721; 568/17, 646		
Applicant ARIZONA BOARD OF REGENTS, A BODY CORPORATE OF THE STATE OF ARIZONA, ACTING FOR AND ON BEHAL		
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>5</u> sheets, including this cover sheet.</p> <p><input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of <u>8</u> sheets.</p>		
<p>3. This report contains indications relating to the following items:</p> <p>I <input checked="" type="checkbox"/> Basis of the report</p> <p>II <input type="checkbox"/> Priority</p> <p>III <input type="checkbox"/> Non-establishment of report with regard to novelty, inventive step and industrial applicability</p> <p>IV <input type="checkbox"/> Lack of unity of invention</p> <p>V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p>VI <input type="checkbox"/> Certain documents cited</p> <p>VII <input type="checkbox"/> Certain defects in the international application</p> <p>VIII <input type="checkbox"/> Certain observations on the international application</p>		
Date of submission of the demand 10 November 2003 (10.11.2003)	Date of completion of this report 23 July 2004 (23.07.2004)	
Name and mailing address of the IPEA/US Mail Stop PCT, Attn: IPEA/US Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 Facsimile No. (703) 872-9306	Authorized officer Rosalynd Keys <i>J. Roberts for</i> Telephone No. (571) 272-1600	

Form PCT/IPEA/409 (cover sheet)(July 1998)

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I. Basis of the report

1. With regard to the elements of the international application:*

☐ the international application as originally filed.☒ the description:

pages 2-31 as originally filed

pages NONE, filed with the demand

pages NONE, filed with the letter of _____.

☒ the claims:

pages 36, 38, 39, and 41, as originally filed

pages NONE, as amended (together with any statement) under Article 19

pages NONE, filed with the demand

pages 32-35, 37, 40, 42 and 43, filed with the letter of 19 July 2004 (19.07.2004)

☒ the drawings:

pages 1-5, as originally filed

pages NONE, filed with the demand

pages NONE, filed with the letter of _____.

☐ the sequence listing part of the description:

pages NONE, as originally filed

pages NONE, filed with the demand

pages NONE, filed with the letter of _____.

2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language _____ which is:

☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).☐ the language of publication of the international application (under Rule 48.3(b)).☐ the language of the translation furnished for the purposes of international preliminary examination (under Rules 55.2 and/or 55.3).

3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

☐ contained in the international application in printed form.☐ filed together with the international application in computer readable form.☐ furnished subsequently to this Authority in written form.☐ furnished subsequently to this Authority in computer readable form.☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.4. ☒ The amendments have resulted in the cancellation of:☒ the description, pages none☒ the claims, Nos. 5☒ the drawings, sheets/fig none5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/US03/11008**V. Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. STATEMENT**

Novelty (N)

Claims 3, 4, 6, 8-10, 13, 14, and 16-18 YES
Claims 1, 2, 7, 11, 12 and 15 NO

Inventive Step (IS)

Claims 4, 6, 8-10, 14, 16 and 18 YES
Claims 1-3, 7, 11-13, 15 and 17 NO

Industrial Applicability (IA)

Claims 1-4, 6-18 YES
Claims NONE NO**2. CITATIONS AND EXPLANATIONS**

Please See Continuation Sheet

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

V. 2. Citations and Explanations:

Claims 2, 7 and 12 lack novelty under PCT Article 33(2) as being anticipated by Spath et al. (Synthesis of pterostilbene. Ber. February 1941, Vol. 74B, pages 189-192). Spath et al. teach the claimed invention (see entire disclosure)

Claims 3 and 13 lack an inventive step under PCT Article 33(3) as being obvious over Gracza et al. (Journal of Chromatography, April 1984, Vol. 287, No. 2, pages 462-465). Gracza et al. teach a compound which is a geometric isomer (trans isomer) of the claimed compound. One having ordinary skill in the art would have found the claimed compound and composition obvious over the compound taught by Gracza et al. because compounds which have very close structural similarities are expected to have similar properties absent a showing of unexpected results. Further, it is obvious to add a carrier to an obvious compound.

Claims 3, 13 and 17 lack an inventive step under PCT Article 33(3) as being obvious over Ryu et al. (Arch. Pharm. Res., January 1994, Vol. 17, No. 1, pages 42-44). Ryu et al. teach the trans isomer of the instant claimed compound (see entire disclosure, in particular page 43). The compound taught by Ryu et al. is disclosed as having antitumor activity. One having ordinary skill in the art would have found the instant compound, composition and method obvious over the teachings of Ryu et al. because of the close structural similarity and similar utility of the instant compounds with those disclosed by Ryu et al.

Claims 1, 11 and 15 lack novelty under PCT Article 33(2) as being anticipated by Ghai et al. (US 2002/0028852 A1). Ghai et al. teach the claimed cis compound, composition and that said compound has anti-tumor promoting activity (see paragraphs 0003, 0012, 0013, 0016, 0017, 00019 and Table 1).

Claims 1, 11 and 15 lack an inventive step under PCT Article 33(3) as being obvious over Ghai et al. (US 2002/0028852 A1). Ghai et al. teach the trans isomer of the instant claimed compound. The compound taught by Ghai et al. is disclosed as having cancer preventive activity. One having ordinary skill in the art would have found the instant compound, composition and method obvious over the teachings of Ghai et al. because of the close structural similarity and similar utility of the instant compounds with those disclosed by Ghai et al.

Claims 1 and 2 lack novelty under PCT Article 33(2) as being anticipated by Takaoka (Proceedings of the Imperial Academy (Tokyo), October 1940, Vol. 16, pages 405-407). Takaoka teach the claimed compounds (see compound VIII on page 406)

Claims 1, 2, 11 and 12 lack an inventive step under PCT Article 33(3) as being obvious over Takaoka (Proceedings of the Imperial Academy (Tokyo), October 1940, Vol. 16, pages 405-407). Takaoka teach the claimed compound, but fail to teach a pharmaceutical composition comprising the compound. However, since it is known that resveratrol has pharmaceutical use one having ordinary skill in the art would expect derivatives of resveratrol to also have pharmaceutical use and would find it obvious to add a pharmaceutical

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.
PCT/US03/11008

Supplemental Box

(To be used when the space in any of the preceding boxes is not sufficient)

carrier to the compound to make it pharmaceutically acceptable.

Claims 4, 6, 8-10, 14, 16 and 18 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest the compound of claim 4, the composition comprising said compound and the claimed method of using the compound of claim 4. The methods of claims 6, 8, and 10 are also not taught or fairly suggested by the prior art. Claim 16 meets the criteria with respect to Rimando et al. because it is a P reference.

Claims 1-4, 6-18 meet the criteria set out in PCT Article 33(4), and thus have industrial applicability because the subject matter claimed can be made or used in industry.

----- NEW CITATIONS -----
NONE